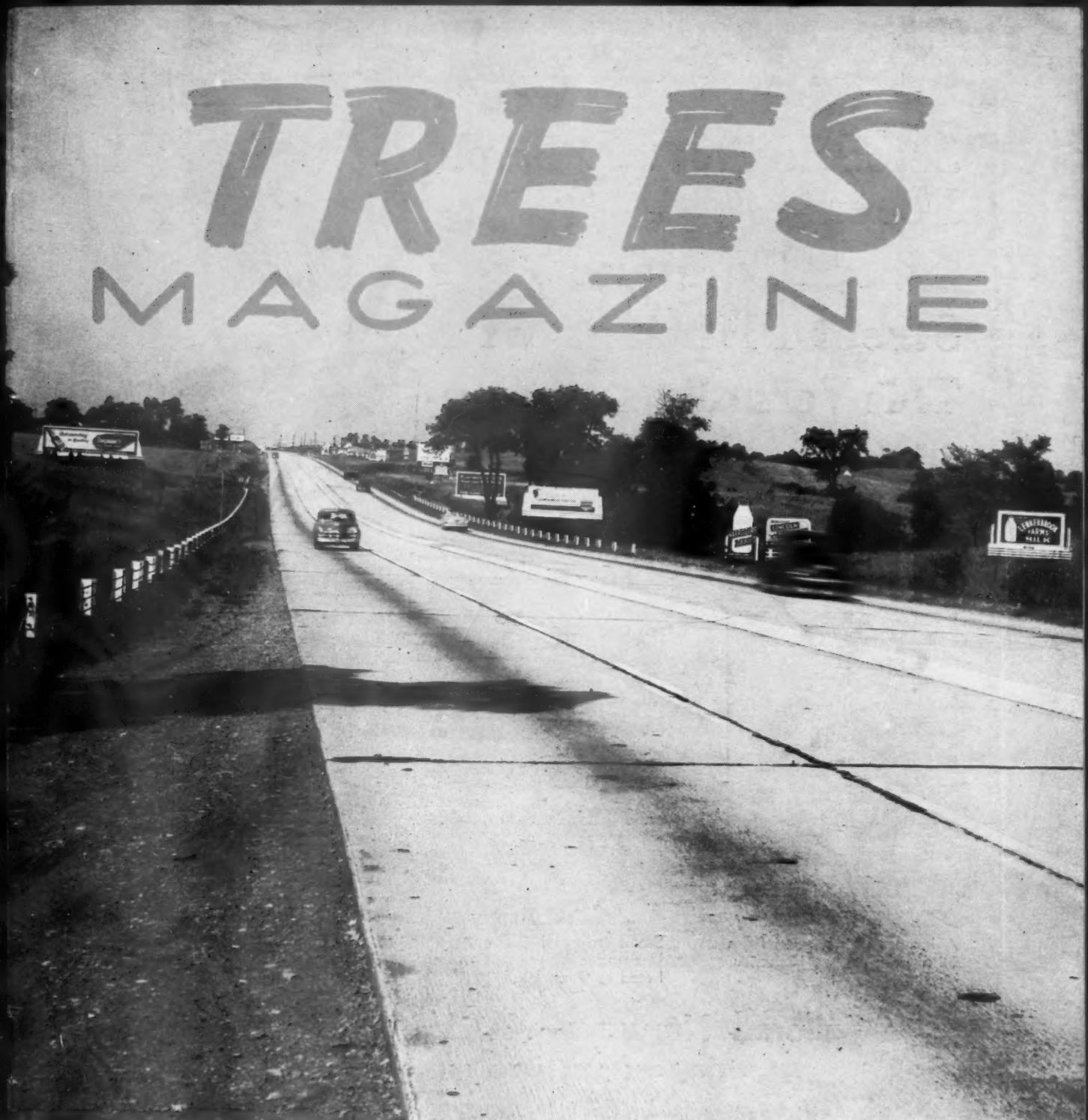
TREES MAGAZINE



A Loused up Highway With Plenty of Reading Matter

New York State Arborists Meeting, Cornell Univ., Ithaca, Jan. 11-13

Elms Susceptible to DED and Phloem Necrosis *Richard Campana*

Insect Pests of Honey Locust Trees *Donald L. Schuder*

Nov.-Dec., 1958 *The Journal of American Arboriculture* Vol. 19. No. 1

Selected Norway Maple Forms—

To Make Your Street Plantings With This Versatile Tree Conflict-Free!

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A true columnar form. Not ragged grower like the common pyramidal form. Use on business streets or where bus & truck traffic is heavy —or shallow setback.

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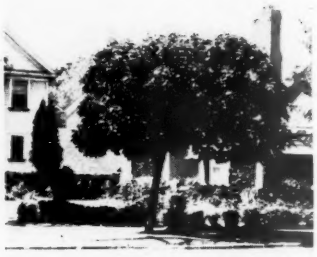

"Almira" Norway

Small informal Globe type. Use under 20' wires. Can be lifted to 9' or 10'.

"Cleveland" Norway

A beautiful upright oval form. Use with shallow setback and narrow treelawn.

Use Tailored Norways—Not Irregular Seedlings

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TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); and Parks (Municipal and National) in the U. S. Scanlon Publishing Co., 7621 Lewis Road, Olmsted Falls, Ohio. Subscription by mail $3.00; outside United States, $3.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With .... EDW. SCANLON

■ As THIS IS WRITTEN, Nov. 17, we have had the MOST WONDERFUL FALL in many a year. NOT COLOR WISE, it didn't seem so good generally, but, so far at the Rancho we have only had about FOUR LIGHT FROSTS. Cool nights and days, mostly in the 50's and 60's. LETS HAVE MORE.

■ **The most SCRUMPTIOUS, beautifullest FALL COLOR of any TREE AT THE RANCHO, including NYSSA, is a nice little specimen of ACER CAPILLIPES. The color is a SUNSET ORANGE, yellow and red—it is RICH AND BREATHTAKING, then with the STRIPED BARK —what a LOVELY TREE. It's pretty close to a big specimen of CRIMSON KING—two guesses WHICH ONE gets the pitch.**

■ Got FED UP on coffee some time ago and decided to "TAKE TEA AND SEE." It's good but did you EVER SEE anything SORRIER, SOGGIER OR MORE WORN OUT than a beat up TEA-BAG. Tried instant Nestea and it DOES THE TRICK.

■ **KEITH DAVEY, prez of the WESTERN SHADE TREE CONFERENCE penned AN INVITATION to attend the 26TH MEETING in SAN FRANCISCO beginning May 8th. CAN'T MAKE IT, becuz, all things being equal I should be GETTING SOME PIX of FLOWERING TREES IN EUROPE for the sequel to "THE WANDERING ARBORIST etc". This will tentatively be titled "WITH THE FLOWERING STREET TREES IN EUROPE."**

■ GEO GRAVES paid his ANNUAL VISIT to the Rancho. He PASSED THE WORD that a SOPHORA (japonica) ON CAPE COD has taken the brunt of a NUMBER OF HURRICANES and plenty of SALT SPRAY with NO ILL EFFECTS. They like a SANDY SOIL so the sea shore should GET A TRIAL with this REAL HANDSOME TREE.

■ **You can BELIEVE IT OR NOT but that CRAZY REDWOOD grew another 5' THIS YEAR. If it keeps up this pace pace I'll have TO REVISE my plans as to THE DATE FOR CUTTING the road thru THE TRUNK. This could STEP IT UP at least 200 YEARS.**

■ PAUL TILFORD brought TWO VISITING FIREMEN up to the RANCHO TREES this fall—NOEL WYSONG and WALT MORROW both got the $64 TOUR. Come again.

■ **A NEWSPAPER CLIPPING from CURT WAGNER in Akron states that TWO TREE CHAMPIONS, State of Ohio, that is, live in Akron. A 13 ft. circumference COPPER BEECH (variety not mentioned) 67' tall and 73' spread. The other is a CYPRESS (Taxodium distichum) which is 13'8" in circumference, 68' tall—42' spread.**

■ That MARY HELLER—the HELLER-GRO GAL—sure wouldn't have ANY TROUBLE writing on the HEAD OF A PIN—her sig is TEENSY WEENSEY, the teensyest we've ever seen. She informs us that LANPHEAR ARBS SUPPLY, So. Euclid is the NEW OHIO DEALER for HELLER-GRO.

■ **OH MAMMY—I just received some pictures from MR. ALBERT DOORENBOS, retired PARKS DIRECTOR of THE HAGUE, and do they make my mouth water—TWO STREETS of PRUNUS AVIUM PLENA, Double Flowered Mazzard Cherry—a beautiful, beautiful tree (SEE CUTS PAGE 5) and I'm going to SHARE THIS LUSCIOUS sight with you. The FLOWER IS PURE WHITE, looks like a MINIATURE ROSE.**

■ MR. DOORENBOS is DEEPLY INTERESTED in obtaining SEEDS OF VARIOUS STREET TREES to send to the PEOPLE OF ISRAEL—he suggests MATERIAL FROM TEXAS where the CLIMATE IS COMPARABLE—so if any of you guys FROM THE SECOND LARGEST STATE would like to collect seed for this WORTHY PURPOSE, let ME KNOW and thru MR. DOORENBOS we shall find out WHERE TO SHIP IT.

■ **MERRY THANKS-MAS everybody—this seems like an APPROPRIATE GREETING now that the two days are BEING OBSERVED TOGETHER. Saw a town in Penna where, ON OCT. 30, they already had the CHRISTMAS DECORATIONS UP—this seems like an AWFUL WASTE OF TAXPAYERS DOUGH to take those DECORATIONS DOWN just for a FEW SHORT WEEKS in summer.**

■ MY APOLOGIES to JOHN VAN CAMP for not spelling his name JOHN VAN CAMP. I spelled it like he was THE HEIR to the BAKERY MILLIONS and not just plain JOHN VAN CAMP a hard working CONSULTING ARBORIST. See his story on STREET TREES last issue page 13—THAT'S WHY it was an UNLUCKY PAGE NUMBER.

■ **The latest REGURGITATION seen on TV is an OIL COMPANY telling you how "ATTRACTIVE" their OIL CANS ARE. How about a HAND PAINTED garbage can?**

■ Well, I HAVE A VISA to enter HUNGARY—BUDAPEST—on the SECOND INSTALLMENT of the "TREE SLEUTHING" expedition. Have to get an O. K. from the HUNGARIAN GOV'T. Also WANT TO GO to PRAGUE. There should be some nice examples of SMALL TREES ON STREETS in both places.

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TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all type of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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■ **The XMAS CARD at the BOTTOM OF THIS PAGE is going to HAVE TO DO the job for us this year. It's a HECK OF A JOB getting out a mess of those things and while it's a NICE GESTURE, still added to MANY OTHER THINGS it makes work and takes time that somehow seems to be becoming an item of SHORT SUPPLY.**

■ On page 16 note a headline "THE BRANCHES OF THE LAW." This is a feature that WILL RUN EVERY ISSUE. The author, HOWARD NEWCOMB MORSE, is a noted jurist. I HAVEN'T ASKED him but maybe we could GET SOME QUESTIONS going. If YOU HAVE ANY send them in and WE SHALL SEE. Let me know WHAT YOU THINK of this COLUMN.

A Merry Xmas
and
A Happy New Year
To All
FROM THE RANCHO

Nov.-Dec., 1958 **Journal of the National Arborist Association** Vol 19—No. 1

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

THERE WILL ALWAYS BE TREES

At the expense of being ostracized by fellow Hibernians we must state that a year ago last Fall we found out, even in five days why there will "always be an England." It is a magnificient, sedate, slightly austere country. It has a well kept charm which of course many centuries of culture has imparted.

In great part we attribute this charm and loveliness to its trees. Not necessarily to the huge magnificient beeches and many other large species but mostly to the vast numbers of small flowering trees with which the landscape abounds. These small trees, cherries, hawthorns, magnolias, Asiatic maples, etc., of course caught our eye and fancy as could be expected by anyone who has followed, or is familiar with the editorial policy of this magazine for the past twenty years.

Quite frequently in this country we hear someone get up and grandeloquently declare that overhead lines should be placed underground. A little intelligent thinking before making such remarks would quickly convince the proponent that such a program would not only be almost physically impossible but financially would be more costly than all the silly moon rockets that will be built and exploded for the next five years. Also we hear that some one of these days electric power may be transmitted like radio—don't hold your breath for this to happen — but say the dilletantes, we could then have our big beautiful shade trees. This too we know is silly because of the many other conflicts caused by these forest giants —on streets.

But even supposing the ultimate flight of fancy were to be realized—radio—like transmission of power (for want of a technical term), there will always be trees. And small trees at that. It is an almost impossible thing to try and mix a modern city with a forest—the public realizes this, and as soon as some of the planners find out there are other species besides American elm, London Plane, etc., the turn to sensible trees will be complete.

There will always be trees—for sure. Can you imagine a home, a street, a park or a whole city without trees. Just think about it. A city without trees would be horrible, ugly, unhealthy, or just plain obnoxious. But there are too many sensible people in public life (you only read about the nit wits in the newspapers) who appreciate the public need for trees. And there are the thousands of good citizens who just need a little stirring up, plus sound facts, not "facts" that will stock on hand, given this they will work on reluctant city fathers. We know this is being done, but it requires stirring.

Yes, even with no wires the need for trees would be just as great as it ever was—but of course we know we have been asleep and remiss in this civic need—our cities need trees badly, most of them are so ugly.

Ralph Cornell Honored

Ralph Cornell (left) eminent American Landscape Architect and member of TREES Magazine Advisory Council is presented honor award of the California Council of Landscape Architects by Pres. C. Whitney Mason.

Landscape Architects Meet

Courtland P. Paul, Pasadena landscape architect, is the new president of the California Council of Landscape Architects, elected at its fourth annual convention at El Mirador Hotel in Palm Springs, October 16 through 19.

Paul succeeds C. Mason Whitney of Berkeley as president. Other new officers are: Theodore Osmundson, Jr., San Francisco, vice-president; and Lynn M. F. Harriss, Oakland, executive secretary.

The landscape architects took action to urge that California's new 12,500-mile freeway program be so planned as to preserve the natural beauty of the State and provide a scenic showcase for visitors. They resolved to support the new California Roadside Council "Beautiful Highways" program which includes the landscaping of freeways, control of billboards on the new interstate highway system in California, and a state wide anti-litter campaign.

First annual honor awards of C.C.L.A. for outstanding service to the profession were given to Ralph D. Cornell of Los Angeles, Dr. John W. Gregg and Professor Emeritus Harry W. Shepherd, both of Berkeley.

Public relations for landscape architects was the principal theme of the meeting, with stress being placed by speakers on creating a better understanding of the work and value of the profession in making California a more beautiful place in which to live and work.

Dr. Robert Fenton Craig of the University of Southern California made the principal address at the kickoff luncheon on Friday, emphasizing the need for close cooperation between landscape architects, architects, engineers, landscape and irrigation contractors, and others in allied fields to insure that the public receives the finest in professional skills in future landscaping development.

Craig warned against a tendency in some public agencies for "empire builders" to bypass the services of landscape architects and contractors and conduct their own landscaping programs on a "green thumb" basis, resulting in poor planning and waste of public funds.

Raymond E. Page, Sr., of Beverly Hills, member of the California State Board of Landscape Architects, cautioned the group that their legal responsibilities required written contracts with clients and close study of local and State building codes.

Gordon Whitnall, planning consultant and landscape architect; Robert Hamill, southwest editor of Sunset Magazine; Phillip J. Daniel, Los Angeles architect; and Andre Anastasion, Los Angeles public relations counsellor, were among the other speakers. All stressed the need for landscape architects to widen public understanding and acceptance of their profession.

The next convention is to be held in Yosemite on October 15 through 17 of next year.

Dick Campana To Maine

Dr. Richard Campana, Associate Plant Pathologist on the staff of the Illinois Natural History Survey, has been appointed head of the Department of Botany and Plant Pathology at the University of Maine. In addition to serving as Professor of Botany and Head of the Department of Botany and Plant Pathology in the College of Agriculture, Dr. Campana will be Head of the Department of Botany and Plant Pathology in the Agricultural Experiment Station.

Dr. Richard Campana University of Maine.

A native of metropolitan Boston, Dr. Campana received a BS in Forestry from the University of Idaho in 1943. Following the war he was on the teaching staffs of Pennsylvania State University and North Carolina State College. He received both master's and doctorate degrees in forest pathology from Yale University. Recipient of a research fellowship during doctorate study at Yale, he was also assistant forest pathologist in the Division of Forest Pathology, United States Department of Agriculture for three years. Since coming to Illinois in 1952 he has been concerned primarily with research and education on the two lethal elm diseases, elm phloem necrosis and Dutch elm disease. Currently serving as president of the Illinois Technical Foresters Association, vice president of the Midwestern Chapter of the National Shade Tree Conference, member of the Board of Governors and chairman of the Nomenclature and Standards Committee of the National Shade Tree Conference, he is senior author of "Guide for Community-wide Control of Dutch Elm Disease," a brochure recently published by the Midwestern Chapter of the Conference. Dr. Campana has studied the spread of Dutch elm disease in Illinois intensively and has been most active toward informing the public in Illinois about the nature of the disease and the methods for its control.

Elms Susceptible To Dutch Elm Disease And Elm Phloem Necrosis

RICHARD CAMPANA, PH.D.

Associate Plant Pathologist
Illinois Natural History Survey

All elm species, varieties and hybrids are reported to be susceptible to Dutch elm disease to some degree. However, within recent years various reports have been circulated that certain species, varieties or hybrids are either highly resistant or immune to the disease. While some reports of resistance are based on genuine research, for others there is no evidence to warrant such claims, for some there is evidence to the contrary, and reports of immunity are most certainly unwarranted. Even the very resistant European elms, the Buisman and Schwarz varieties of *Ulmus carpinifolia* are not considered to be immune. In response to numerous inquiries in recent years about elms resistant or immune to Dutch elm disease, the Illinois Natural History Survey has observed and recorded cases of natural infection by the Dutch elm disease fungus of elms reported at one time or another to be resistant or immune to the disease.

Both Asiatic elm species, *Ulmus parvifolia* (Chinese) and *U. pumila* (Siberian), considered to be quite resistant to Dutch elm disease, appear to be more frequently infected than expected from previous reports. In addition, ultimate death of these species from the disease has been observed in some instances.

Although the American elm *(U. americana)* and all its varieties are considered to be most susceptible of all elm species, there is an impression that the Augustine Ascending Elm (a horticultural variety of *Ulmus americana*) is resistant or immune to the disease. During the past three years the Dutch elm disease fungus has been isolated from at least twelve Augustine Ascending Elms, nine of which subsequently died (Fig. 1). Not only has the number of such trees affected by Dutch elm disease increased each year, but in July of 1958, the original, parent Augustine Ascending Elm at Normal, Illinois, showed symptoms of wilt and specimens of the wilting branches yielded the Dutch elm fungus in laboratory culture.

The Augustine Ascending Elm is also known to be susceptible to elm phloem necrosis as are all other varieties of American elm. The Augustine Ascending Elm was successfully inoculated with the elm phloem necrosis virus by Dr. J. C. Carter, Plant Pathologist of the Illinois Natural History Survey, in one of eight trees grafted several years ago. In addition, Dr. Carter was able to make a positive diagnosis of phloem necrosis from a large trunk specimen sent him by Mr. William Beaudry of the Augustine Ascending Elm Research Associates, Inc. The trunk specimen was reported to have been obtained from an affected Augustine Ascending Elm on the grounds of the Governor's Mansion at Springfield, Illinois. More recently the writer made an additional positive diagnosis of phloem necrosis of one of three dead or dying Augustine descending Elms at the Executive Mansion in Springfield. One tree was completely dead and a positive diagnosis for any disease was not possible. The second tree, although not completely dead, was so badly riddled with galleries of the smaller European elm bark beetle *(Scolytus multistriatus)* between the bark and wood that diagnosis of phloem necrosis, while indicative was not positive. The third tree was dying and had phloem discoloration and wintergreen odor typical for positive diagnosis of phloem necrosis.

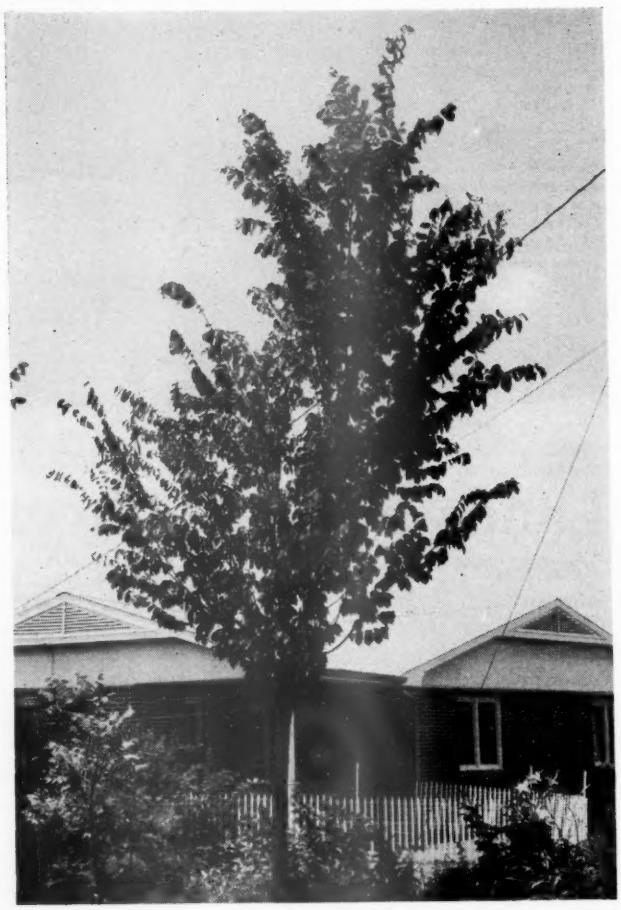

Fig. 1. Initial wilting of an Augustine Ascending Elm from which the Dutch elm disease fungus was isolated. The tree died subsequently.

Propagation of the Augustine Ascending elm is accomplished only through vegetative methods, all individuals having their basic origin in the parent tree in Normal, and trees so propagated are identical genetically to the parent tree. In the absence of evidence to the contrary, it is assumed that all Augustine Ascending Elms are as highly susceptible to Dutch elm disease and elm phloem necrosis as are all other varieties of the American elm.

Reports that Chinese-American hybrid elms are immune or resistant to the disease has led to much misunderstanding among buyers of these elms when the trees have become affected by the disease. Many buyers are not aware

(Continued on Page 19)

Subsurface Problems of Trees And Utility Structures

By Samuel S. Baxter,

Water Commissioner,
Philadelphia, Pennsylvania

(Paper presented from Proceedings First Street Tree and Utility Conference, March 3-4, 1955)

Mr. Samuel S. Baxter: Mr. Anderson, ladies and gentlemen: It is rather obvious to all of you that most of the speakers and most of the persons attending the Conference are either power company men or arborists or those interested in street lighting. How I ever got in here, being a person interested in the operation of water and sewer works, I don't know. In the past I have done a fair amount of street lighting and I tried to get that in my paper to show my erudition.

It happens I am a member of the Fairmount Park Commission, which has a decent park. We also have jurisdiction over street trees, so where there is a problem of water and sewers I have made a few comments about trees to show how little I know about that subject, too. (Laughter)

The original and fundamental purpose of a street was to provide light and air to abutting properties, and permit access to these properties. We have long since passed this concept.

Streets are now thoroughfares, although we are now swinging the pendulum in the reverse way to discourage through travel. Parking is another problem, which was not a problem a half century ago.

The use of streets by utilities of all kinds has added other problems to those who must solve and live with our complex municipal operations. Water and sewer lines with their attendant appurtenant services to buildings, underground power and communication lines, and other miscellaneous structures require careful technical attention, if they are all to get into the same street and give service.

Other utilities are overhead, with their own problems. The overhead and underground facilities are often tied together, and are of such nature that underground lines may go aerial, and vice versa, if such solution is expedient.

Into this picture comes the street tree. It has some relation to the original idea that a street should provide light and air to abutting properties. It is probably not the necessity that water, sewer, or power lines are, but the street tree is a very desirable amenity in a street, and cannot be ruthlessly pushed aside.

In this problem, the street tree has one basic shortcoming. It must occupy space both above the street and below the street, and both of these at the same location. If someone could devise a tree whose trunk could exist at one location, and its branches and roots at other locations, there would be little need for this paper.

The purpose of this paper is to discuss the interrelation of underground utilities and street trees, and some of the problems which are involved. Since water and sewer lines give rise to most of these problems, no attempt will be made to discuss the matter of other utilities.

Circumstances vary somewhat between water and sewer lines. There are also distinct problems between original construction on one hand, and operating problems on the other.

It is not news to tell this group that tree roots have an affinity for water and will seek that water wherever it may be found in the ground. Water and sewer lines can provide such water, both in the main lines and in the laterals and service pipes which connect to abutting properties.

On the construction side, trouble is generally encountered in the old sections of our towns and cities, where properties have been built and street trees planted for years before an underground sewer system was installed. There are also the very old streets in which the sewers have been built years ago, and in which trees have been installed, but where the cities are facing the problem of reconstruction of these old sewers. In such cases, the existence of tree roots may pose some problems.

A well maintained water system poses little operating problems, which involve tree roots. Such systems operate under pressure with tight joints. Leaks or breaks in the pipes are generally noticed through the appearance of water at the surface or by reduction in pressures. In such cases, repairs can be made before tree roots can search for the water which leaks into the ground.

There are some places, however, where leaks, particularly in water mains, may run off into underground streams or into the sewers without appearing on the surface, or without causing undue pressure drops. Most well-run water utilities conduct continuous underground surveys to find such leaks, and they normally present no problem in connection with street trees.

Sewers, both main line and house laterals, pose an entirely different problem. These sewers do not operate under pressure and do not have tight joints, as compared to those in water lines. Small defects in the sewers or laterals may cause only a small amount of sewage to flow into the ground. In many cases, the opening into the sewer line or lateral may be above the flow line and no ordinary means will detect the break or opening in the joint. The joint opening may be either an actual void or may involve porosity in the join material.

Through the means which nature has given to trees to find moisture, roots will seek the wet soil in the vicinity of such open lines and will gradually enter the sewers or laterals through some type of opening. In some dry ground, the manner in which tree roots will force their way through slightly porous joint material in order to seek the moisture in the line is almost unbelievable. In the older suburbs of Philadelphia, instances have been found where a growing tree root under a sewer lateral has forced the lateral upward sufficiently to open a joint and thus admit smaller roots.

Some trees have a far greater capacity for searching for openings in sewer lines than others. In the eastern part of the country, with which the writer is familiar, the poplar and willow trees are especially bad actors. Roots from these trees will in time completely clog small pipe sewers and sewer laterals. In some cases, the complete filling of the pipe is such that replacement seems the only way to correct the situation.

There are several ways in which the tree root problem can be combatted in sewer lines. The first solution is to make the sewers and laterals as tight as possible. This solution involves economic decisions, since normal sewer construction costs will not permit sewer lines to be built which will meet every possible tree root condition.

The use of vitrified clay pipe for sewer laterals is a perfectly proper one where joints are properly made, and where severe root problems do not exist. The use of cast iron soil pipe may be justified in the presence of very severe root conditions, but it is also necessary that joints be made tight, and remain tight.

In Philadelphia, practice on vitrified pipe lateral joints for many years called for some type of jute gasket, and a Port-

Turn Page

land cement mortar facing. Such construction was rigid and any movement of the pipe could cause an opening in the joint. It was also difficult to obtain the best workmanship at the bottom of the pipe, with some resultant leakage, and attraction of roots.

Within recent years, Philadelphia has adopted for all bell and spigot joints in concrete and vitrified pipe under 42 in. in diameter a semi-flexible joint which has given good results in preventing openings and leakage. In this method, a shaped-asbestos-type material is placed and caulked in the annular space at the joint. A hot poured bituminous joint compound is then poured in such manner as to completely seal the joint.

The second solution concerns the choice of the street trees themselves. Certainly poplar and willow trees do not belong in any locations near sewer lines, or near sidewalk paving. Each locality must make its choice to suit the individual location. In Philadelphia, the Fairmount Park Commission, which has jurisdiction over street trees, is concentrating on Red Oak, Pin Oak, Gingko, Norway Maple, European Linden, and Silver Linden. These choices have not been made primarily because of underground conditions, but these trees give a minimum of underground trouble, consistent with their other uses.

The third solution concerns the location of the tree with reference to the sewer lateral. It is probable that not too much thought has been given to this point. This is so, no matter whether the tree or the sewer came first.

Many cities, such as Philadelphia, have a complete and comprehensive control of underground utilities. Locations are planned and allocated far in advance of construction, and real efforts are made to see that these utilities do not conflict with one another in horizontal, vertical, or lateral location. Similarly, consideration is given to proper spacing of utility structures which may interfere with one another because of the nature of the service involved.

Many cities also have comprehensive and adequate street tree ordinances and regulations. Much thought is given to the type of tree, spacing, the leaf problem, and similar matters. There may be some consideration given to underground structures.

As a general rule, however, the street tree control and underground utility control have not been integrated, or has close liaison been established between the agencies involved. This is a field where some progress might be made.

In most cases, the tree is located to coincide with some spacing requirement, to miss a driveway or utility pole, or to bear some relation to a building. Consideration of the location of the sewer lateral comes last, if at all.

And the fault is not entirely that of the tree planter. If the tree exists before sewer location, the lateral location is fixed primarily by the shortest distance from the sewer to the building, without too much thought being given to tree roots.

A fourth solution involves a continuing program of maintenance, both on main sewer lines and on laterals, at those locations where the tree root problem is present. There is real value in clearing and removing tree roots in the early stages before they completely block the sewer lines themselves, or before they restrict the size of the pipe enough to cause blockage by paper and other material in the sewer.

Modern machines have been developed for cleaning main sewer lines. In addition to cleaning out obstructions, they also cut out material, including tree roots.

In the same manner, cutting machines have been devised for use by plumbers on the smaller house laterals. When used in time, they can prevent the more expensive job of tearing up the street in order to renew the line.

Mr. John W. Hood, Superintendent of Sewage Treatment at Ridgewood, New Jersey, describes an interesting method of controlling sewer roots, which was published in 1948 as Special Report No. 5 of the American Public Works Association. Mr. Hood's method calls for the placing of copper sulphate in the sewers, both in main line and house connections.

In this method, Mr. Hood used crystals of $CuSO^4$. At times of low flow, these are placed in the main sewers in fairly large quantity, and are flushed through the water closets in smaller quantities to clear out tree roots in the house laterals.

This conference will be interested in the effect of Mr. Hood's method on the trees. He says that "There just isn't any to report." Copper sulphate apparently kills only the local roots which are in the sewer. There was no discoloration of leaves noted.

Editors Note:

Copper sulphate should not be used where septic tanks are in service.

Mr. Hood's report brings out a point which is of importance to operators of sewage treatment plants. This is that tree roots not only cause blocked sewers with the resultant local trouble, but because the time of transit to the treatment plant is greatly increased by the slow rate of flow, the sewage arrives stale rather than fresh, and presents real problems and nuisance in the operation of the plant.

Construction work, for sewers, water lines, and other utilities is complicated by the presence of street trees. The problem presents itself in several ways. Where the new work is close to the line of trees, the roots must be cut where they cross the trench or else protected in some manner. The importance of this problem varies with the size of the trench and the size of the tree. One of the solutions is to undercut the tree roots with a ladder type ditching machine.

Of lesser frequency is the condition involving large and deep excavations which require heavy machine and long-boomed cranes. In this type of work, it is generally necessary to perform a rather drastic pruning operation before the work begins, in order that the trees would not be damaged by the operation of the equipment.

The benefits of street tree location in other areas than immediately adjacent to the curb are many. Most of them involve such things as overhead utility lines, street lighting and traffic safety. Such location will also be of real benefit during construction or reconstruction work in the street, both to the utility work and the tree itself. Where curb planting is necessary, much benefit will derive from the use of the smaller trees, with their smaller root systems, which are the subject of this conference.

Work Aloft

The versatility of aerial lifts for line work was highlighted by a recently produced motion picture titled "Work Aloft," shown at the recent conference of the Engineering and Operation Section of the Southeastern Electric Exchange.

The film was shown as part of a panel discussion on "Aerial Lifts as an Aid to Linemen." Panel members included C. Clyde Crockett, Superintendent of Transportation for Louisiana Power and Light Company, New Orleans, La., and David Richey, Chief Engineer for Emhart Manufacturing Company, Skyworker Division. S. B. Doss, Skyworker's General Sales Manager, served as moderator.

Following showing of the film, panel members, in response to questions, provided additional explanations of how Skyworkers have been widely used to achieve savings up to 50 per cent in costs of line work. The panel then pointed out that aerial lifts have made it possible to utilize highly experienced men aloft far beyond the time when these linemen would normally give up climbing.

An interesting development over the past four year, panel members stressed, has been the sharp decrease in cost of aerial lifts resulting from a constantly increasing acceptance of this equipment by utilities throughout the country.

Insect Pests of Honey-Locust Trees

By Donald L. Schuder,
Purdue University

(Reprinted from the Arborist's News, Vol. 23, No. 5)

Honey-locust, particularly the clones of the thornless variety such as "Moraine," "Imperial," and "Sunburst," are becoming increasingly popular as shade and ornamental trees. Correlated with the increased planting of these trees, there is a corresponding increase in the kinds and numbers of insect pests which attack them in Indiana, and presumably also in other states. This is a typical insect-plant relationship for whenever any crop, whether it be trees or grain, is grown intensively, the insect problems increase in proportion. With an extreme use of clonal propagations, the problem is often multiplied many-fold, since clonal populations are all alike. Insect and disease problems may develop rapidly and wipe out the entire plant population. The preceeding example is exactly the opposite effect to that where a monotypic species is concerned for the latter are usually disease and insect free, for example: ginkgo, metasequoia and katsura tree.

During the past several years, several different insects have been found attacking honey-locust and its varieties in Indiana. Because of their potential importance in new home plantings, it was thought desirable to call attention to these pests.

The Mimosa webworm, *Homadaula albizziae* Clarke, attacks both mimosa and honey-locust in the southern half of the state and has been present in the Indianapolis area since 1953. The insect is present in most southern states from the Atlantic to the Mississippi River. The injury by the second generation of this caterpillar is particularly noticeable in August.

The moths have a wingspread of ½ inch and are silver-gray with the wings lightly stippled with black spots. The moths appear in June and lay their eggs on the foliage. Each female lays 50 to 60 eggs. The eggs hatch in two to three days. The larvae are dark brown, diffused with pink and about ½ inch long. They feed in colonies in the webbing spun over the foliage and skeletonize the underside of the leaflets. The injured leaflets turn brown and give a brown appearance to the entire tree as if it had been scorched by fire. In mid-summer the larvae pupate either in the web or drop to the trunk or soil where they spin flimsy cocoons in cracks and crevices of the bark or in the ground cover. The second generation adults emerge in early August and the cycle is repeated. There is a partial third generation as far north as Kentucky. The insect winters as a pupae in debris.

Injury by the mimosa webworm can be prevented by spraying susceptible species and varieties in mid-June and mid-August with either DDT, toxaphene or lead arsenate. (Westcott, 1956). As many as three sprays per season may be needed. Make the applications in mid-June, mid-July and late August.

The honey-locust borer, *Agrilis difficilis* Gory, was found attacking vigorously growing honey-locust trees at Lafayette, Indiana, in 1956. The larval stage is a typical flat-headed borer which burrows beneath the bark and eventually girdles the tree. One of the first symtoms of infestation by this borer is the exudation of large quantities of gum around infested nodes. The adult beetles, which emerge in June, are about ½ inch long, elongate and black with a metallic lustre. There is one generation annually. No control measures are known at present. Lindane sprays did not control established infestations. A spray of ethylene dibromide emulsion may prove to be effective. (Blatchley and Leng, 1916, Westcott, 1956).

The honey-locust pod gall, *Cecidomyia gleditshiae* O. S., was first observed in 1866 and is common on honey-locust in Connecticut, New York, New Jersey and Indiana. The leaflets are folded along the central vein so that the edges are brought together and form a pod-like gall. One to three larvae develop within a gall and the adult flies emerge in June and July. Cook, 1905).

The honey-locust mite, *Eotetranychus multidigituli* (Ewing) (*Tetranychus ellipticus* Garman), has defoliated thornless honey-locust almost annually in the area of Lafayette since 1949. Studies in Illinois also indicate that this mite can cause serious damage to the honey-locust (English and Snetsinger, 1957). Defoliated trees usually leaf out again in late summer, but are generally weakened as a result of the early defoliation. Infested leaflets are dappled with yellow spots caused by the feeding of the mites. Each spot at which one of the mites feeds bleaches yellow and the affected leaf tissues die and infested leaflets drop from the tree. As the infestation develops, the entire tree becomes yellow in appearance. The elliptical-shaped mites, their webbing and pearly, lozenge-shaped eggs occur along the mid-vein on the abaxial side of the leaf.

The honey-locust is the only tree species attacked by this mite. The honey-locust mite has been reported from Indiana, Illinois, Ohio, Connecticut, Washington, D. C., North Carolina and Louisiana.

The mite can be controlled by applying parathion, malathion, aramite, ovotran or chlorobenzilate early in the spring or whenever an infestation develops. (English and Snetsinger, 1957; Schuder, 1950).

A leafhopper, *Empoasca pergandei* Gill., frequently attacks the foliage of locust and may cause defoliation. Applications of DDT serve to protect the foliage from attack.

A number of other insects have been noted by various authors as attacking honey-locust. These include a number of scale insects such as the cottony maple scale, *Pulvinaria vitis* (L); the San Jose Scale, *Quadraspidiotus perniciosus* (Comstock); *Diaspidiotus osborni* (Newell and Cockerell); *Phenacaspis spinicola* Dietz and Morrison; *Chionaspis gleditisiae* Sanders; *Chionaspis ortholobis* Comstock; and *Lecanium caryae* Fitch. Four species of caterpillars noted by various writers as attacking honey-locust are the walnut datana, *Datana integerrima* G. and R.; the imperial moth, *Eacles, imperialis* (Drury); and the spring and fall cankerworms, *Paleacrita vernata* (Peck), *Alsophila pometaria* (Harr.) and the bagworm *Thyridpteryx ephemeraeformis* (Haw.)

This array of insect pests is quite formidable and suggests that nuserymen and landscape designers should not use the honey-locust and its varieties excessively, lest by so doing they induce a catastrophic epidemic of some of the afore mentioned undesirable pests. The greatest lesson that we should have learned from the Dutch elm disease and phloem necrosis epidemics is not to overplant any single species. Use the thornless honey-locust, for it is a fine tree, but don't make mass plantings which may turn out to be only a banquet for the bugs.

PLANT AMERICA — WISELY

Comet Power Scythe

A completely portable power clearing tool of multiple uses has been introduced to the 1959 market by Comet Industries, Richmond, Indiana, to be known as the Comet Power Scythe, MK400. Designed to do the job six times as fast as present methods using weed whips, swing scythes, brush hooks, clippers, axes, etc. It is reported that this revolutionary new low cost tool makes light work of ground maintenance of homes, estates, farms, ranches, parks, cemeteries, etc.

Powered by the famous Clinton AV400 Panther, 2½ H.P., 2 cycle engine known all over for its sturdy construction, economical servicing, and quietness of operation.

The Comet Power Scythe in action.

Power Transmission housing is of light weight, heavy walled, magnesium alloy sand castings and aircraft type aluminum alloy structural tubing.

The Comet Power Scythe is equipped with a 11" Tri-cut weed blade, 40% faster in operation than conventional rotary bar blades and able to cut growth up to 1½" diameter. It is further stated that the Comet Power Scythe light weight (only 28 lbs.) utilizes balanced weight positioning from a single point shoulder suspension strap.

Three additional accessories makes the Comet Power Scythe a truly versatile power tool. A 44 tooth, 10" circular brush saw blade replaces the 11" Tri-cut weed blade enabling user to cut brush and trees up to 6" in a matter of seconds.

The TR-500 Trimmer attachment—It is reported is ideal for close trimming around stones, buildings, flower beds, and shrubbery.

Double French White Mazz

A street of "Gean" or Double Flowered Mazzard Cherries in full bloom on a street in The Hague, Holland. Photo was recently received from Mr. S. G. A. Doorenbos retired Parks Director.

A selection of Prunus avium, this small flowering globe form (P. a. Schnee) should be a wonderful tree for streets with low wires. The tree shown was pictured by the author in a small off street park in Rotterdam, Holland in 1957.

lazzard Cherry

By Edward H. Scanlon

This beautiful Cherry has been in cultivation in Europe for over 300 years. According to Rehaler it is believed to have been introduced into the United States about 1625. If there is any good reason why it has not been widely used here, as it has been in Europe, particularly Holland and England. It was known in France as the Double French White and was introduced here under that name.

The lower right hand picture, taken by the author in Rotterdam, Holland in 1957, shows the excellent form of this tree in a street. The upper photo to the left shows a street of compartively young trees in full bloom in The Hague. The spacing in the right hand picture is much better, about 50′, than the smaller trees. It is reported that the tree will attain a height of 45′-50′. However, under street conditions, which are seldom optimum, it could probably safely be used on the basis of a 35′ maximum.

In spring this beautiful tree is densely clothed with small dead-white, double flowers that resemble a miniature rose. The foliage is bold, to about six inches in length and of a good rich green. It does not fruit.

Prunus avium flore pluma is known widely thruout Europe where the species is indigenous, also in England and Western Asia. It is hardy in Zone 3.

On the basis of the various street situations under which we have observed this tree on European streets we would recommend its use under the following conditions. It would be equally desirable as a street, park or small home tree. On streets it should have a house setback of at least 30′—treelawn, 5′ or over, to practically no limit. Place at least 30′ from street lights — 20′ from intersections—do not use under any but extremely high wires at least 45′.

A splendid dwarf or small informal Globe form was observed in a small off street park in Rotterdam. This tree is known as Prunus avium Schnee, although we have failed entirely to find any reference to it in the literature (see picture lower left). This should be a beautiful thing to use under low wires, and if worked on 7′ stems should have sufficient height to provide street clearance for any but very high trucks. Under conditions where large vehicles use a street under consideration, the treelawn should be wide enough to absorb the spread of the tree. It flowers profusely which should be a very desirable factor and will probably not exceed 16′ or 17′ in height and spread if worked on a 7′ standard.

Massachusetts Tree Wardens and Foresters Association Convention

PROGRAM
WEDNESDAY, FEBRUARY 4, 1959

Morning Session

9:30—Registration and Inspection of Exhibits. (Registration in the lobby, $1.00).
Coffee and Donuts (Courtesy of your Association).

10:30 Invocation—Rev. Burton Smith, United Presbyterian Church, Newton, Mass.
Greetings—Frederick C. Burk, President.
Secretary's Report—Clifford S. Chater
Treasurer's Report—Richard T. Ferrara.
Affiliations Committee—Mrs. T. O. Guptill.
Auditing Committee—W. D. Whitcomb
Legislative Committee—Mrs. T. O. Guptill
Thomas Morley.
Educational Committee—Gordon King.
Deceased and Honorary Members—John J. Kennedy.
Announcement of Scholarship Awards—Charles Dondero.
Nomination and Election of Officers for 1959.

11:00—Utilities Program (to be announced)
New England Tel. & Tel. and Boston Edison.
NOON RECESS—INSPECTION OF EXHIBITS.

Afternoon Session

1:30—Improving the Appearance of Your Town or City
Norman Cook, Cape Cod Chamber of Commerce, Hyannis, Mass.

2:00—Where do we Stand in Pest Control.
Dr. Emory D. Burgess, Director, Plant Pest Control Division, Agricultural Research Service, Washington 25, D. C.

2:45—Poisonous Plants.
Dr. Maynard Quimby, Massachusetts College of Pharmacy, Brookline, Mass.

3:30—Film (to be announced)

7:00—Banquet—Hotel Vendome, Boston, Massachusetts.
Presentation of Scholarship Awards.

PROGRAM
THURSDAY, FEBRUARY 5, 1959

Morning Session

9:00—Registration and Inspection of Exhibits.
Coffee and Donuts (Courtesy of your Association).

10:00 Changing Times Alter Styles in Shade Trees.
Professor H. O. Perkins, Dept. of Plant Science, University of Connecticut, Storrs, Conn.

10:30 Diagnosing Tree Troubles.
Dr. Richard Campana, Head, Dept. of Botany and Plant Pathology, Univ. of Maine, Orono, Maine.

11:00—The National Shade Tree Conference. Advantages of Membership and Chapter Organizations.
Dr. L. C. Chadwick, Secretary-Treasurer, National Shade Tree Conference, Ohio State Univ., Columbus 10, Ohio.

11:30—Film (to be announced).
NOON RECESS—INSPECTION OF EXHIBITS.

Afternoon Session

1:30—Some Factors Influencing Tree Growth.
Professor John H. Noyes, Extension Forester, Univ. of Massachusetts, Amherst, Mass.

2:15—Shade Tree and Other Insect Pests and Their Control.
Dr. Ellsworth Wheeler, Professor of Entomology, Univ. of Massachusetts, Amherst, Mass.

FOR YOUR CALENDAR

Plant Propagators Society, Wade Park Manor Hotel, Cleveland, Ohio, December 4-6, 1958.

Indiana Arborist Association, Purdue University, Lafayette, Indiana, January 7-9, 1959.

New York State Arborists meeting and Short Course at Cornell University, Ithaca, N. Y., January 11-13, 1959.

Fifth Kansas State Shade Tree Conference, Kansas State College, January 15-16, 1959.

Ohio Short Course for Arborists, Landscape Gardeners and Nurserymen, Columbus, January 19-21, 1959.

Winter Meeting of The Ohio Nurserymen's Association, Neil House, Columbus, Ohio, January 21, 22, 23, 1959.

Winter Meeting National Arborist Association, Williamsburg, Va., February 8, 9, 10, 1959.

35th National Shade Tree Conference, Detroit, Michigan, August 17-21, 1959.

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White Oak Resists Wilt Fungus

G. J. BART and H. C. YOUNG

Back in 1951 and 1952 when Ohio's oak woods were surveyed by airplane to measure the extent of oak wilt, the disease was spotted in 55 counties. Since then, this most serious of all oak diseases has spread to six more counties. It is most widespread in the heart of our timber region: namely, in Scioto, Pike and Ross Counties.

Continues to Appear

A mysterious aspect of the disease is this: it continues to crop up in areas previously free of wilt, even though many miles may separate diseased areas from clean ones. Although laboratory research at the Ohio Agricultural Experiment Station has shown that insects can carry spores of the fungus to healthy oaks, the method of spread in the woods is still unknown. Could it be that certain oak trees are carriers of the disease without showing symptoms themselves? This is one aspect the Experiment Station is probing.

Station plant pathologists over the past several years have observed white oaks which are still living even though some branches showed wilt symptoms and were diagnosed as having the disease as early as 1951. If the past history of such trees were unknown, they would now be regarded as healthy trees. White oaks are more resistant to the destructive fungus than are red or black oaks, most researchers agree. This resistance has not been satisfactorily explained, but the theory generally proposed is that obstructions in the water vessels of white oak stems serve as "locks" which limit free and easy movement of the fungus.

To test this theory an experiment was set up to determine how fast the wilt fungus moves in white oaks as compared to red oaks. Trees, 10 to 12 feet tall, growing in the oak wilt nursery at the Experiment Station were used for tests.

Upward and downward movement of the fungus was measured. This was accomplished by placing spores in small cuts made either in the root or just below the stem tip of the tallest branch of both red and white oaks.

To determine the farthest upward and downward advance of the fungus, sections of wood were removed at four- or six-inch intervals and placed in a culture medium. If the fungus is present in a wood chip, it will grow upon the culture medium and there be readily identified.

Results show there was little difference at the outset of the experiment in the rate of spore movement within red or white oaks regardless of whether the spores were placed in the roots or stem tips. But after nine days the wilt fungus made outstanding progress in red oaks over white oaks. At the end of the experiment (42 days) the fungus reached a maximum height of 174 inches in red oaks and only 15 inches in white oaks when roots were inoculated. When stem tips were inoculated the maximum downward movement was 101 inches in red oaks and 19 inches in white oaks. Most of the red oaks, but none of the white oaks, wilted during the 42-days.

Thus in white oak the wilt fungus is definitely limited in its movement which may be considered as a type of resistance. The reason for this limited movement, however, cannot be due entirely to natural mechanical obstructions in the white oak vessels. This was demonstrated by the ease with which a known concentration of spores suspended in water could be drawn through stem sections of white oak. The number of spores in a certain volume of water was approximately the same after passing through either red or white oak stem sections. In other words, there was no "screening out" of spores by the white oak stem tissue.

A possible explanation then for the apparent resistance of some white oaks to the oak wilt fungus may be due to some substance or substances that inhibit rapid growth of the fungus within the stems.

Reprinted from Ohio Farm and Home Research

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Wright Rebel Saw

A "Show Me" promotion to give personal demonstrations of its reciprocating blade portable power saw has been set from November 1 through 8 by the Wright Power Saw division of Thomas Industries Inc., Louisville, Kentucky.

Lou Turner, Wright Saw sales manager, in announcing the "Show Me" promotion, said Wright saw dealers throughout the nation will participate, with particular emphasis on demonstration of the Wright "Super Rebel" saw to farmers.

"When a farmer can actually use a Wright reciprocating blade power saw in a demonstration, he can quickly see how its light weight, easy portability, and ease of use makes the 'Super Rebel' ideal equipment for the farm," Turner said.

Thomas Industries, he pointed out, has supplied the Wright Saw dealers with suggested newspaper advertisement material, window banners, a promotional mailer, and has inaugurated its own "Show Me" advertisements in farm publications.

He said this was the first time the company had developed such an extensive campaign on a nationwide basis to promote the personal demonstration of the "Super Rebel" to prospective farm customers.

The Wright saw is the world's only reciprocating blade power saw, and because of its blade action is considered to be the safest power saw on the market, he said. Its ready-to-work weight, including gasoline, grip bar, blade and other parts is less than twenty-five pounds.

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THE BRANCHES OF THE LAW

By Howard Newcomb Morse

Counsellor at Law of the Supreme Court of the United States of America

"Encroaching Roots as Rendering Owner Liable for Damages"

In the case of Buckingham vs. Elliott, decided by the Supreme Court of Mississippi, S. H. Buckingham and T. G. Elliott owned and resided upon adjoining lots in Aberdeen, Miss., Buckingham purchased his house and lot two years before Elliott. There were growing upon Elliott's lot two white mulberry trees, which were planted long before his or Buckingham's purchase. These trees were situated, one 20 feet and the other 17 feet from the dividing line between Elliott and Buckingham.

On Buckingham's lot there was a well of water three feet from the boundry line between his and Elliott's lots, 20 feet distant from one of the mulberry trees, and 23 feet from the other. The water of this well was used by Buckingham for domestic purposes until some time after Elliott's purchase of his lot, when the roots from the mulberry trees, growing below the surface of the ground, crossed the dividing line between the lots, invaded Buckingham's premises, penetrated his well, polluted the water, and rendered it unfit for domestic uses. Buckingham then notified Elliott of this invasion and injury of his well, and requested Elliott to cut down the trees or permit him to cut them down. This request Elliott refused. The white mulberry is a valuable ornamental shade tree, quite common in Aberdeen.

Upon the refusal of Elliott to permit his mulberry trees to be cut down, Buckingham sued Elliott for the damage to his well by the roots of Elliott's trees. The Circuit Court of Monroe County, Mississippi, rendered judgment in favor of Elliott on the ground that Buckingham had no cause of action, and Buckingham appealed. The Supreme Court of Mississippi reversed the decision of the lower court and rendered judgment in favor of Buckingham.

The Supreme Court declared: "We are not able to draw a distinction between the roots of a tree which extend into a neighbor's land and overhanging branches . . . It seems to be settled law that overhanging branches are a nuisance, and it must follow that invading roots are. The person intruded on by branches may cut them off; it must be true that one may cut off invading roots; it must be true that he who is injured by encroaching roots from his neighbor's tree can recover the damages sustained from them. The right of action seems clear. In determining how much the person injured shall recover, it may be proper to consider the means of protection in his own hands against the injury complained of. It is an admitted fact in this case that the roots of the mulberry trees destroyed the well . . . The trees were planted by a former owner, but the appellee (Elliott) has no right to maintain and continue a nuisance after notice of its character and the injury done by it. True, he has as much right to shade and ornamental trees as his neighbor has to his well of unpolluted water; but if in the enjoyment of his right he invades his neighbor's, he is answerable for it."

The Supreme Court concluded its decision by quoting the fundamental maxim, "So use your own as not to hurt another."

Spray Computor

A new pesticide and cost calculator has been announced by The Pest-Cal Co., Box 551, Lemon Grove, California. The company claims quick and accurate calculations for dosages of over 70 pesticides used in household, agricultural and weed control work.

On one side of the circular chart, insecticide formulations are divided into emulsifiable concentrates, wettable powders and solutions. When the calculator is rotated to the desired insecticide, rodenticide or herbicide, the dosage rate appears in a small window. On the reverse side a helpful cost calculator figures finished spray cost.

Other features include: BRAB chemical soil barrier recommendations, several tables of equivalents, and percentages of finished sprays most commonly used for household pest control.

For further information write the company.

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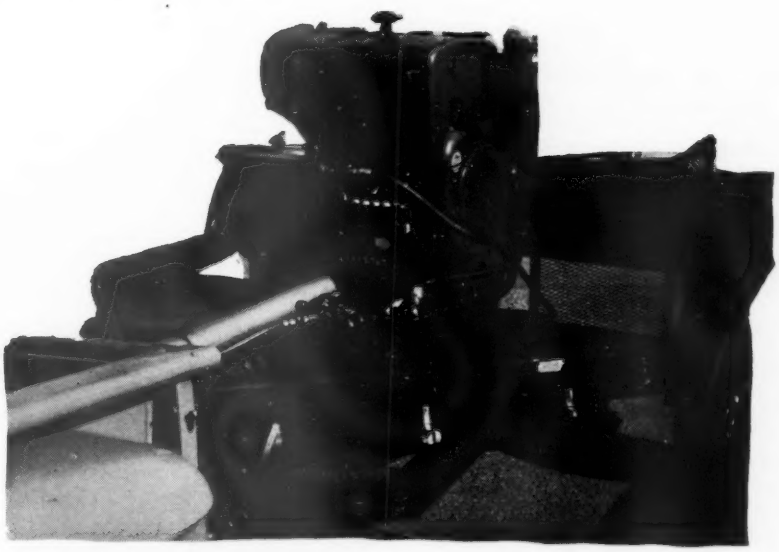

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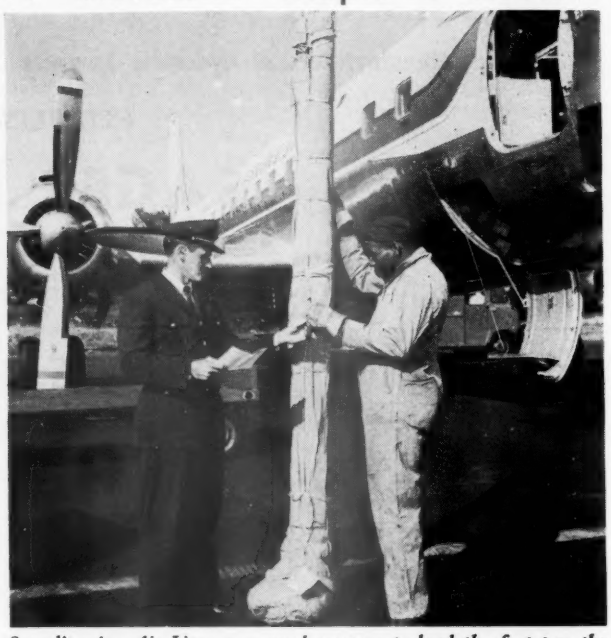
Nels Johnson Tool Display

(above) Display of imported arborists tools by Nels Johnson, Evanston, Ill.

A "Cleveland" Maple to Moscow



Scandinavian Air Lines personnel prepare to load the first tree the line had ever carried to Moscow. The tree was a "Cleveland" Norway Maple, planted in Moscow in October of 1957 by Ed Scanlon, (see Vol. 18—No. 3).

DED in Kansas

Two enemies of the elm tree, phloem necrosis and Dutch elm disease, have been making serious inroads in eastern Kansas.

This is the report of Hugh Thompson, Kansas State College entomologist working with tree insects and diseases, as the result of field observations during the summer. The investigations were under the auspices of the Kansas entomological commission and the Kansas agricultural experiment station.

Thompson said phloem necrosis is active throughout most of eastern Kansas, while Dutch elm disease is killing trees in Leavenworth, Wyandotte, Johnson, and Miami counties.

The K-State entomologist added that Dutch elm fungus has been isolated from bark beetles taken from dead elm wood in several additional counties, which indicates that Dutch elm disease will be even more widespread next year.

Home owners and others interested in protecting their trees need to control the insects which spread the diseases—in the case of Dutch elm disease this is the bark beetle, and in the case of phloem necrosis, it is the leafhopper.

Spraying just will not get the job done in the case of the bark beetle, Thompson said. He recommended a "sanitation" program with all dead wood in which bark beetles can live being burned or buried under at least six inches of soil. This is especially important in the fall and winter. This dead wood should not be stored for firewood unless the bark is peeled away and burned. Spraying, however, may be the only alternative where there are too many wild elms nearby to make a sanitation program effective.

Leafhoppers that spread phloem necrosis overwinter as adults by hiding in protected places, such as bark crevices, and under old leaves and trash. Cleaning up old leaves and other trash will reduce, but not eliminate, these overwintering adults. The only real protection against leafhoppers, who inject the phloem necrosis virus when they pierce the leaves with their beaks in the spring and suck sap, is to spray the foliage with DDT during May or early June.

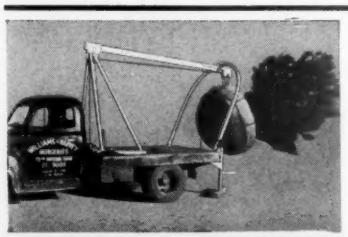
Thompson warned that spraying, pruning, or removing large trees requires a professionally trained arborist. Detailed information on sprays can be obtained from the department of entomology at Kansas State College, Manhattan.

Mr. Ed. Scanlon
Trees Magazine

Each issue of *Trees* is a cover-to-cover must with me. I have enjoyed many of your articles immensely. Standout in my mind: Freeman Parr's notes on running a small business — You should have more of this type of thing. Seems to me that the commercial Arborists as a group suffer chronically from "biditis" an inflammation of the brain tissues which causes one to work at prices below cost. Trouble arises, I believe, because many of us do not know our own costs and/or cannot stand the grief of seeing our competitors getting the job.

Current series of diagnosis of disease is swell—lets have more.

George Callaway
Llenroc Tree Experts,
Argyle, N. Y.



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Elms

(Continued from Page 6)

that resistance (a relative term) does not mean immunity (an absolute term). In addition, it is not generally realized that resistance may result only in slowing the spread of the disease throughout the tree, and that death may be the ultimate result in any event.

The Dutch elm disease fungus has been isolated recently from two hybrid elms known respectively as Field and Hamburg Chinese-American Hybrids. The Field Elm from which the fungus was isolated was so badly affected by midsummer that the writer considered it to be of no ornamental value. More recently, this particular tree has shown evidence of recovery indicating some resistance. Whether the tree actually will recover should be of much interest since it was so badly affected. Perhaps of greater significance, however, even elms resistant to Dutch elm disease once weakened, become predisposed to invasion by both European elm bark beetles and elm borers, making less probable ultimate and complete recovery. Beetles alone are known to kill elms following weakening by drought. The Hamburg elm from which the fungus was obtained was reported to have died completely within a period of six weeks after initial wilting occurred. It would not be accurate to conclude that all other Hamburg elms would necessarily be as susceptible; the degree of susceptibility or resistance of the Hamburg elm can only be determined through further research. In this respect it is possible that the Hamburg elm had never been exposed before to a strain of the Dutch elm disease fungus as virulent as that isolated.

It should be pointed out that each of the producers of elm varieties and hybrids mentioned here has been co-operative in making available adequate numbers of their trees for testing for susceptibility and possible resistance. At present sufficient numbers of trees have not been established long enough in the experimental tree plot of the Illinois Natural History Survey for adequate inoculation tests for Dutch elm disease.

WINTER MEETING

CONNECTICUT TREE PROTECTIVE ASSN.
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13th Annual American Horticultural Congress Held At Colonial Williamsburg

The 13th Annual American Horticultural Congress held at Colonial Williamsburg October 22-25 was one of the most successful in the history of the Council. Over 150 delegates gathered to participate from all parts of the country and Canada.

The Garden Writers Association of America opened the Congress with a special breakfast on the morning of October 23. Mrs. Jesse F. Hakes, Glenwood, Md., Congress Chairman then welcomed the group to the Opening Session.

Two films were shown courtesy of the American Association of Nurserymen entitled Basic Techniques of Home Landscaping and Landscape for Living. Dr. Albert J. Irving, President of the American Horticultural Council presided at the Plenary Session where reports were given by Officers and Chairmen of Commissions and Committees.

The October 23 luncheon was presided over by Dr. Henry T. Skinner, Director of the U. S. National Arboretum. The featured speaker was Ivor Noel-Hume, Chief Archaelogist of Colonial Williamsburg whose subject was "The Secret Earth of Williamsburg." A tour of the Restored Gardens of Williamsburg followed conducted by Alden Hopkins, Resident Landscape Architect.

A late afternoon tea was sponsored by Colonial Williamsburg. At dinner Harold Epstein, President of the American Rock Garden Society, introduced a most interesting husband-and-wife team, Mr. and Mrs. Raymond D. Wood. Their magnificent slides on the Arctic illustrated a talk on "Flowers of the Midnight Sun."

Friday morning October 24 also began with a Garden Writers Association of America breakfast as well as a continuation of Committee and Commission reports. John H. Walker, Executive Secretary of the Society of American Florists ably presided over reports of member organizations of which there are now 115 in the American Horticultural Council. During this same session presided over by Dr. George H. M. Lawrence of the Bailey Hortorium, Dr. Russell J. Seibert, Director of Longwood Gardens delivered a report on 1958 International Horicultural Relations including his paper at the recent International Horticultural Congress in Nice, France. In the absence of Dr. Harold B. Tukey of Michigan State College, R. Milton Carleton of Vaughan Seed Co. discussed the possibilities of a U. S. invitation for the International Horticultural Congress in 1966. As a prelude to this event Gustave Springer, as a representative of the International Flower Show in Rotterdam, Holland of 1960 outlined steps that could be taken to obtain Federal Funds for these several international representations. President Irving appointed a Committee to cooperate with Mr. Springer so that AHC will become the coordinating agency for American participation in the Rotterdam Show.

Dr. Richard P. White, Executive Vice-President of the American Association of Nurserymen, presided at the October 24 luncheon. For the first time coffee from Hawaii was served, a delicious brew. The Hon. Phillip Alampi, Secretary of Agriculture for the State of New Jersey reported for the Resolutions Committee. One important resolution was the deep concern over the failure of U.S.D.A. to assign funds for a building with equipment for the U. S. National Arboretum.

Immediately after luncheon Frank L. Teuton, Research Information Officer for U.S.D.A. presented a fascinating review of "Research on Parade" including a style show of new materials. The afternoon session "What's New In Horticulture" presided over by the Hon. Phillip J. Alampi included the following speakers: Ralph S. Peer, President of the American Camellia Society on camellias, John H. Walker, Executive Secretary of the Society of American Florists on Floriculture, William F. Kosar, U. S. National Arboretum on Hollies, Richard Thomson of the American Rose Society on roses and Frederick Huette of the Norfolk Parks Department on trees.

A fitting climax to the festivities was the Annual Banquet when special citations were presented personally to David Burpee, Burpee Seed Co., Philadelphia,

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Pa., Mrs. Helen S. Hull of Boonton, N. J., Prof. Victor Ries of Columbus, Ohio and Arno H. Nehrling, Massachusetts Horticultural Society, Boston, Mass. Thomas Dolliver Church of San Francisco, Calif. was unable to be present.

For the first time a new medal award was given by the American Horticultural Council established by President Albert J. Irving of New York. The very worthy recipient of the Liberty Hyde Bailey Medal was Dr. John Wister of the Arthur Hoyt Scott Foundation, Swarthmore, Pa. Another new award was approved at the Congress, the establishment of a F. A. Bartlett Award by Dr. Bartlett, tree expert to be given for appreciation or knowledge of ornamental trees.

The banquet speaker, the Hon. Parke C. Brinkley, Commissioner, Department of Agriculture and Immigration, Commonwealth of Virginia spoke on Virgina, the Birthplace of Ornamentals.

In line with the international concept of AHC, Margaret Herbst of New York presented President Albert J. Irving with a special certificate of greeting to the 13th Congress from the Office National des Debouches Agricole et Horticoles of Brussels, Belgium.

Outstanding exhibits were arranged by the Potomac Rose Society, National Chrysanthemum Society, American Violet Society, American Horticultural Society, the U. S. Department of Agriculture and the American Association of Botanical Gardens and Arboretums. Most beautiful flower arrangements were on display daily by the Green Spring, Warrenton, Winchester-Clarke, Capitol Landing, Albemarle and Williamsburg Garden Clubs.

The Congress Committee consisted of Mrs. Jesse F. Hakes, Chairman, assisted by Frederick Heutte, Alden Hopkins, Thomas F. Wheeldon, Henry T. Skinner, R. P. White and John H. Walker. The 14th Congress will take place in Rochester, N. Y., the 15th at the Los Angeles Arboretum, Arcadia, California.

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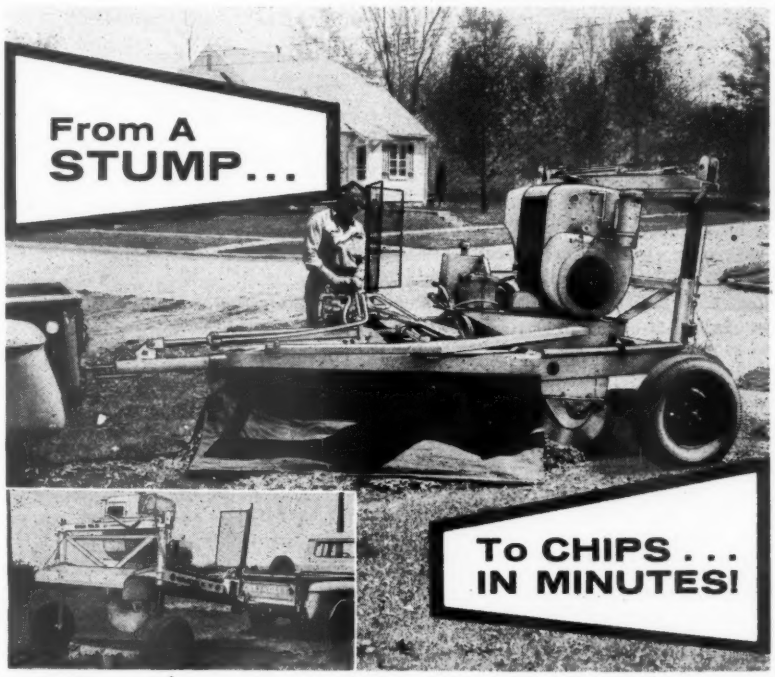

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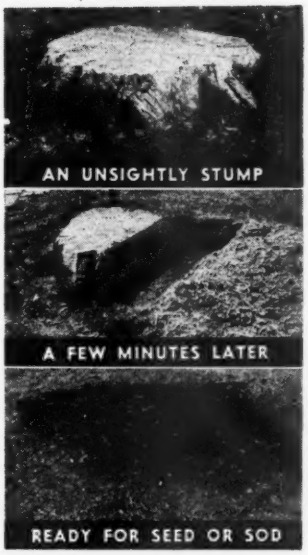

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Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted, Falls, Ohio.

FLOWERS OF THE WORLD in full color, by Robt. S. Lemmon and Charles L. Sherman. Doubleday & Co., Inc., 575 Madison Ave., New York 22. 280 pgs. 619 color pictures. $7.50.

Flowers are the world's most intriguing agencies of self-perpetuation. Their basic purpose, of course, is to produce seeds which, under proper conditions, will grow into plants similar to their ancestors. Yet, ever since the dawn of recorded history, flowers have strongly influenced mankind. Painting and sculpture, literature and music, architecture, weaving and designing of every sort are only a few of the arts and crafts in which their endless forms and beauties have been reflected.

Herein is a fascinating global collection of beautiful flowers, newly photographed in full color, harmoniously interwoven with the eye-opening stories of the men and women who discovered them, cultivated, and in many cases spread their beauty around the world.

For the benefit of the serious student and those gardeners who may actually want to acquire a particular plant, the book provides a detailed scientific index in its final pages—prepared with the cooperation of George Kalmbacker of the Brooklyn Botanic Garden.

This is a new and original work throughout. Nearly 600 of the 619 transparencies reproduced here were chosen from over 8,000 taken over a five year period by Charles L. Sherman and his assistant Roy Goin. Mr. Sherman is one of the originators of the Audubon Nature Program, a professional nature photographer, and editor of "Nature's Wonders in Full Color."

The entire text is the work of Robert S. Lemmon, for 22 years the Managing and Garden Editor of *House and Garden Magazine*, founder and publisher of *Real Garden Magazine*, and later Managing Editor of *The Home Garden Magazine*. "Flowers of the World in Full Color" is Mr. Lemmon's 14th book. He is also the author of over 300 national magazine and newspaper articles, all largely on plants, gardening and conservation.

The full page garden photos that so handsomely add to the beauty of this volume are the work of Paul E. Genereux and F. W. Cassebeer, both noted for their exquisite flower photography.

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SMALL FRUITS FOR YOUR HOME GARDEN, by J. Harold, Doubleday & Co., Inc., 575 Madison Ave., New York 22. 372 pgs., illus.-color, $4.95.

Every garden can produce small fruits —strawberries, raspberries, currants, and many others. These plants require only a minimum amount of space, give a good yield, and pose very few problems in pest control and fertilizing. As foods—in addition to their fresh-fruit delights—they lend themselves beautifully to preserving and freezing and so provide year-round enjoyment.

This clearly presented, readable guide is fully illustrated with sixty photographs and four line drawings and is the direct result of Dr. Clark's long experience in this field as a horticultural consultant.

He has covered every essential phase in the production of small fruits—from the individual requirements of the various species to cultivation and harvesting. Dr. Clarke has also included a special section on small fruit breeding, preserving, and the many ways by which the home gardener can turn a hobby into a profitable enterprise.

Small fruits for your home garden deals with every conceivable aspect of growing small fruits and is a reference book which the commercial grower as well as the home gardener will want on his shelf.

* * * *

THE ROCKWELL'S COMPLETE BOOK OF ROSES, by F. F. Rockwell and Esther C. Grayson. Doubleday & Co., Inc., 575 Madison Ave., New York 22. 332 pgs., illus.-color. $5.95.

Here is a really *complete* book about roses —one that will enable even the beginner to grow vigorous, strong plants and an abundance of blooms. No detail is omitted from the comprehensive instructions provided in connection with every phase of rose culture, from the time of purchasing the plants to tucking them in for the winter in such a way that they will come through safely and give you a finer show the next year, and many more to follow.

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The Complete Book of Roses deals with the selection of the types of plants which will best suit your requirements, preferances, or problems of climate; it tells how to provide conditions that will make them safe and happy, and it gives full details of successful culture, including chapters on propagating your own plants and on exhibiting. This is the book that rose lovers have been waiting for—a book full of clearly presented, *complete* information which you can follow, step by step, to rewarding success in growing your own beautiful roses.

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GROUNDS MAINTENANCE HANDBOOK, by H. S. Conover (2nd Edition). F. W. Dodge Corporation. 501 pgs. illus. $10.75.

This comprehensive volume is the only book ever published with complete information on the maintenance of public, semi-public, industrial, and private grounds. Anyone responsible for developing and maintaining grounds will find this new work the most valuable reference at his disposal.

Ten large chapters treat every important aspect of grounds maintenance:

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6. Weeds
7. Soil Erosion
8. Maintenance of Roads and Parking Areas
9. Materials Specifications
10. Maintenance of Picnic Areas

Over 225 drawings, photographs and tables help make this handbook more easy to use and more instantly meaningful. A detailed index insures immediate reference to any topic.

Among the people this book will serve best are parks and highways personnel, landscape architects and contractors, nurserymen, civil engineers, and those responsible for the grounds of golf courses, resorts and recreational areas, industrial and commercial projects of every description, and any other location where grounds must be developed and maintained.

* * * *

PRINCIPLES OF HORTICULTURE by Ervin L. Denisen. The Macmillan Co., New York. 509 pgs. illus. $6.95.

The author has gone into the ornamental aspects of the subject in greater and more interesting detail than several other books of recent years. This should provide an excellent guide to the study of horticulture in colleges, or by the individual. The book is divided into three principal sections: 1) Fundamentals of Horticulture 2) Skills and Practices in Horticulture 3) Horticulture for the Home. This last section could and should be expanded to cover every topic needed by the millions of new home owners who are given so little sound, practical information by the so-called garden magazines.

* * * *

INTERNATIONAL CODE OF NOMENCLATURE FOR CULTIVATED PLANTS, by Editorial Committee. American Hort. Council, Arnold Arboretum. Jamaica Plain 30, Mass. 28 pgs. 50 cents.

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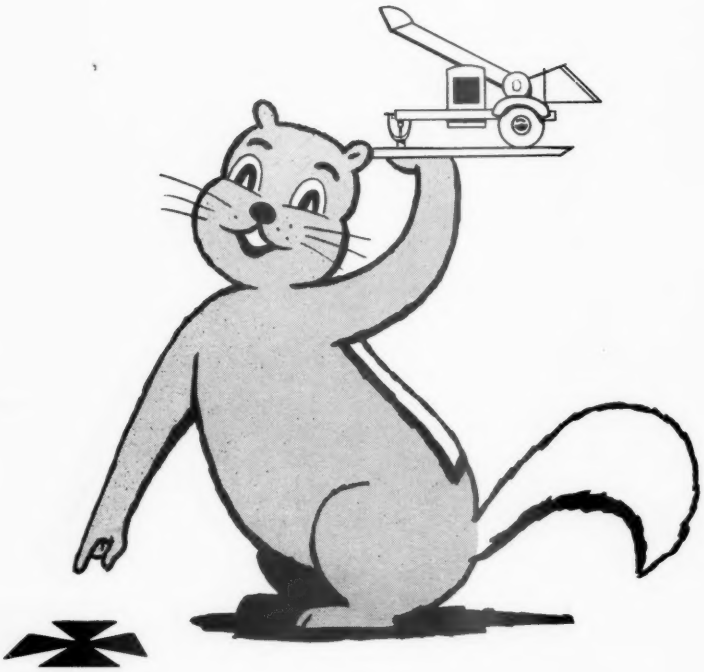

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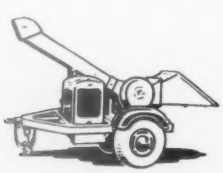

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